

NO. 4. — *Preliminary Notice of a few Species of Echini,*  
by ALEXANDER AGASSIZ.

THE following species are briefly noticed in advance of the fuller descriptions of the Illustrated Catalogue to complete the synonymy of the species of Echini in the collection of the Museum.

**Strongylocentrotus armiger.\***

Test thin, flattened above, regularly arched below; is at once distinguished from its congeners by its peculiar short, blunt, stout spines, swollen in the middle of the shaft, resembling those of *Echinometra oblonga*. The large primary tubercles, arranged in two principal vertical rows, in both areas, flanked by indistinct vertical rows of secondaries, are all placed nearer the abactinal pole on the depressed portion of the test, decreasing rapidly in size towards the actinostome. Genital pores large. Poriferous zone broad, pores arranged in arcs of from six to seven pairs.

Free Public Museum (Liverpool); Brit. Museum; Mus. Comp. Zoöl.  
— Australia.

**Sphærechinus Australiae.†**

The Museum has received at various times, from Mr. Henry Edwards, a sea-urchin intermediate between *Psammechinus* and *Strongylocentrotus*, remarkable for the thickness of its test, its compact abactinal system, the uniform size of the primary tubercles; the secondary tubercles closely packed and filling completely the whole space between the primaries, both in the ambulacral and interambulacral areas. The test is globular, resembling, in outline, somewhat *Amblypneustes*, has no ambitus, a very small actinostome, with short, sharp, narrow actinal cuts. The poriferous zone divided by secondary tubercles into an inner vertical row of pairs of pores far above one another, and an outer part with pores arranged in from three to four pairs, all the pores deeply sunken between the secondaries. Actinal membrane covered by large elliptical

\* The species included in this genus by Brandt are, *S. chlorocentrotus* = *Echinus Dröbachiensis* MÜLL (teste Grube), and the species of section D of Blainville, including *E. lividus*, *parvituberculatus*, . . . ; in a different section he places *E. tuberculatus* BLAINV.?

† *Cryptopora Australiae* *Michelin* MS. École des Mines, Paris.

plates moderately closely packed. The spines are short; in dried specimens, violet at base tipped with green, test violet with greenish tubercles.

École des Mines; Mus. Comp. Zoöl. — Australia.

#### **Amblypneustes pentagonus.**

Unlike the other species of *Amblypneustes*, the outline of the test from above is pentagonal; the ambulacra projecting considerably beyond the concave interambulacra. The coronal plates are high, not half as numerous as in other species of the genus of the same size. There is but a single primary vertical row of tubercles both in the ambulacral and in the interambulacral spaces; secondary tubercles few in number, very irregularly scattered; sutural pores small, limited to angle of plates; test thin, high, remarkable for the great size of the primary spines. Abactinal system delicate, and not prominent and stout as in other allied species.

Mauritius?

#### **Amblypneustes inflatus.\***

Test moderately stout, nearly spherical; poriferous zone more than equalling in width the median ambulacral region, where the tubercles form irregular horizontal rows of from two to three tubercles for each plate. In the interambulacral space there is for each plate a larger primary, forming a distinct vertical row, and from one to six smaller tubercles on each side of the median interambulacral line forming horizontal rows, and very indistinct vertical rows. No bare median ambulacral or interambulacral spaces.

New Holland.

This as well as the following species belong to the section of *Amblypneustes* (*Holopneustes*),† in which the poriferous zones are arranged in three vertical rows of pores, the middle row often extremely sporadic, as in *H. porosissimus*, and having no sutural pores.

#### **Amblypneustes purpurascens.\***

Actinal and abactinal diameter equal, poriferous zone equal in width to the corresponding tuberculiferous ambulacral space. In large speci-

\* *Lütken* MS. in litt.

† It is possible that these two species may turn out to be only different stages of growth of *H. porosissimus*. The variation in the other species of *Amblypneustes* is very great, but here is confined to the poriferous zone, which makes it difficult to decide the point for want of material.

mens the middle row of pores is very irregular, forming zigzag lines, while in younger specimens the middle row is nearly as uniform as the inner and outer rows; the latter is characterized by the greater size of the inner pore, and the distance separating the pores of a pair. The tubercles of both areas form most regular horizontal rows, as many as ten tubercles of nearly uniform size on each side of the median line, and from one to three for the ambulacral spaces, forming no distinct vertical rows.

Mus. Copenhagen; Mus. Hamburg; Mus. Comp. Zoöl. — New Holland.

#### **Spatangus Lütkeni.\***

Closely allied to *Spatangus purpureus*, test relatively more convex and abactinal diameter greater. Seen in profile test nearly semi-circular, somewhat more curved anteriorly; anal plane lower and more oblique than in *S. purpureus*, the subanal fasciole belonging properly to the actinal surface. The shape and proportions of the ambulacra, as well as the distribution of the large tubercles between the ambulacra, is not materially different from *S. purpureus*. The shape of the subanal fasciole (having three pores on each side) is very different from that of *S. purpureus* (having but two pores); it is in the latter species about three times broader than long, while in *S. Lütkeni* it is only one and a half times broader than long, in specimens of about the same size. The color in alcohol is dark violet.

Mus. Copenhagen; Mus. Comp. Zoöl. — China Seas (Salmin).

#### **Lovenia cordiformis.†**

Differs from the other species of the genus by the great convexity of the test, the anterior vertex, compared to *L. hystrix*, the relatively smaller number of primary tubercles in the anterior interambulacral spaces, the narrow band of large tubercles upon the edge of the actinal surface, the small size of the purses of these tubercles, the large size of the tubercles within the peripetalous fasciole on each side of the anterior ambulacrum near vertex, the flatness of the test round mouth not forming a prominent posterior lip.

Mus. Comp. Zoöl. Guayamas; Smith. Coll. Gulf of California.

\* Sp. altus *Lütken* MS. in litt.

† *Lütken* MS. in litt.

***Mœra stygia*.**\*

In the British Museum and Copenhagen Museum are specimens of a *Mœra* allied to *M. atropos*, holding to it the same relation which *Echinocardium gibbosum* holds to *E. cordatum*. The test has a short, longitudinal diameter, is remarkable for the great height of the abactinal axis, the sharply truncated anterior extremity, the narrow lateral ambulacra, the elongate anal system, and the prolongation of the anal plastron in a sharp keel.

A specimen in the Mus. Comp. Zoöl. is said to have come from the Red Sea.

***Rhynobrissus pyramidalis*.**

I am indebted to Mr. Thomas J. Moore for a specimen of this remarkable Spatangoid. It is allied to *Brissopsis*, having like it a peripetalous fasciole (narrow), a subanal and anal fasciole (broad); it has, however, no anterior groove, the test being uniformly convex anteriorly, the vertex is posterior slightly in advance of the bevelled posterior extremity. The anal plastron is heart-shaped, somewhat as in *Metalia*, projecting like a keel beyond the outline. Seen from above, the outline of test is diamond-shaped, rounded anteriorly. The ambulacral petals but slightly sunken, resembling those of *Faorina*. The actinostome is crescent-shape, very narrow, extends well across the test, immediately surrounded by a broad, bare space, which forms rapidly narrowing bare ambulacral spaces on each side of the narrow elongate actinal plastron. The spines of the lower surface are long, curved, and slender, while those of the rest of the test are short, hair-like; their coloring is light violet. The anal fasciole is open above the anal system, but a secondary subanal plastron is formed independent of the principal one by a broad band passing below the anal system, slightly above the origin of the anal fasciole, — a feature which thus far has not been noticed in any other genus of Spatangoids, finding its parallel only in the double branch of the anterior part of the peripetalous fasciole of *Faorina*.

Free Public Museum (Liverpool); Mus. Comp. Zoöl. — Linguin. China Seas.

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\* *Lütken* MS. in litt.